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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/648,329

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Sung-Ro Go

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STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

GIESY, ADAM

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 06/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/648,329	Applicant(s) GO, SUNG-RO	
	Examiner Adam R. Giesy	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 25 is objected to because of the following informalities:

Examiner believes that the phrase "other transmitted signal," in line 6 of claim 25 should be rewritten as "other transmitted signal."

Appropriate correction is required.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 20-22, 27, and 28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 20-22, 27, and 28 are drawn to a "program" *per se* as recited in the preamble and as such is non-statutory subject matter. See MPEP §2106.IV.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g. Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held non-statutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the

data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Hagiwara et al. (hereinafter Hagiwara - US Doc. No. 2006/0023589 A1).

Regarding claim 1, Hagiwara discloses a disc drive which records data on a disc, the disc drive comprising: a clock generator which generates a clock signal that is synchronized with a transmission speed of a received signal (see 'write-reference clock' as depicted in Figure 6 as produced by the ATIP decoder - found in Figure 1, element 13); a pickup unit which records recording data corresponding to the received signal on

the disc (Figure 1, element 5); and a recording processing unit which converts the received signal into the recording data by synchronizing with a clock signal generated from the clock generator into recording data and provides the converted recording data to the pickup unit (see Figure 4, see also page 9, paragraphs 0183 thru 0185).

Regarding claim 2, Hagiwara discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the disc drive further comprises a decoder which detects an identifying signal indicating a transmission speed of the received signal (Figure 1, element 13), provides the detected identifying signal to the clock generator (this inherently provides itself with the signal as the decoder is the clock generator), transmits the received signal to the recording processing unit (see arrow from element 13 to element 14 in Figure 1), and the clock generator generates the clock signal that is synchronized with the identifying signal (as seen in Figure 6).

Regarding claim 3, Hagiwara discloses all of the limitations of claim 2 as discussed in the claim 2 rejection above and further that the identifying signal is a periodic signal (frame sync signal appears to be periodic as shown in Figure 6).

Regarding claim 4, Hagiwara discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the recording processing unit comprises an encoder which encodes the received signal (Figure 1, element 14).

Regarding claim 6, Hagiwara discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the disc drive further comprises: a spindle motor which rotates the disc (Figure 1, element 2); and a spindle

motor driving unit which controls a rotation speed of the spindle motor by using the clock signal generated from the clock generator (Figure 1, elements 3 and 4).

Regarding claim 7, Hagiwara discloses all of the limitations of claim 2 as discussed in the claim 2 rejection above and further that the disc drive further comprises: a spindle motor which rotates the disc (Figure 1, element 2); and a spindle motor driving unit which controls a rotation speed of the spindle motor by using the clock signal generated from the clock generator (Figure 1, elements 3 and 4).

Regarding claim 8, Hagiwara discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the received signal is from a channel receiver without an additional medium between the channel receiver and the disc drive (see Figure 1, element 6 – no other medium exists between the read amplifier and the disc).

Regarding claim 9, Hagiwara discloses a disc drive which records data on a disc, the disc drive comprising: a pickup unit which records recording data corresponding to a received signal on the disc (Figure 1, element 5); and a recording processing unit which converts the received signal into the recording data by synchronizing with a transmission speed of the received signal and provides the recording data to the pickup unit (Figure 1, element 14; see also Figure 6 – shows example of the synchronization process).

Regarding claim 10, Hagiwara discloses all of the limitations of claim 9 as discussed in the claim 9 rejection above and further that the disc drive further comprises a decoder which detects an identifying signal capable of indicating the transmission

Art Unit: 2627

speed of the received signal and transmits the identifying signal to the recording processing unit (Figure 1, element 13).

Regarding claim 11, Hagiwara discloses all of the limitations of claim 10 as discussed in the claim 10 rejection above and further that the identifying signal is a periodic signal (frame sync signal appears to be periodic as shown in Figure 6).

Regarding claim 12, Hagiwara discloses all of the limitations of claim 10 as discussed in the claim 10 rejection above and further that the disc drive further comprises: a spindle motor which rotates the disc (Figure 1, element 2); and a spindle motor driving unit which controls a rotation speed of the spindle motor by synchronizing with the identifying signal (Figure 1, elements 3 and 4).

Regarding claim 13, Hagiwara discloses all of the limitations of claim 11 as discussed in the claim 11 rejection above and further that the disc drive further comprises: a spindle motor which rotates the disc (Figure 1, element 2); and a spindle motor driving unit which controls a rotation speed of the spindle motor by synchronizing with the identifying signal (Figure 1, elements 3 and 4).

Regarding claim 14, Hagiwara discloses all of the limitations of claim 9 as discussed in the claim 9 rejection above and further that the received signal is from a channel receiver without an additional medium between the channel receiver and the disc drive (see Figure 1, element 6 – no other medium exists between the read amplifier and the disc).

Regarding claim 15, Hagiwara discloses a method of controlling a recording speed of a disc drive capable of recording data on a disc, comprising: generating a

clock signal that is synchronized with a transmission speed of a received signal (as generated by the ATIP decoder – Figure 1, element 13); converting the received signal into recording data that is to be recorded on the disc by synchronizing with the clock signal (as shown in Figure 6); and recording the converted recording data on the disc (see the arrows indicating data transfer through elements 13, 14, 16, and 5 in Figure 1).

Regarding claim 16, Hagiwara discloses all of the limitations of claim 15 as discussed in the claim 15 rejection above and further that the generating the clock signal comprises: detecting an identifying signal capable of indicating the transmission speed of the received signal (as performed by Figure 1, element 13); and generating a clock signal that is synchronized with the identifying signal (as shown in Figure 6).

Regarding claim 17, Hagiwara discloses all of the limitations of claim 16 as discussed in the claim 16 rejection above and further that the identifying signal is a periodic signal (frame sync signal appears to be periodic as shown in Figure 6).

Regarding claim 18, Hagiwara discloses all of the limitations of claim 15 as discussed in the claim 15 rejection above and further that controlling a rotation speed of the spindle motor that rotates the disc by synchronizing with the clock signal (see page 8, paragraph 0171 – since the disc velocity is in sync with the data being written and the data is in sync with the clock, the rotation of the disc must inherently be in sync with the clock).

Regarding claim 19, Hagiwara discloses all of the limitations of claim 15 as discussed in the claim 15 rejection above and further that the received signal is from a channel receiver without an additional medium between the channel receiver and the

Art Unit: 2627

disc drive (see Figure 1, element 6 – no other medium exists between the read amplifier and the disc).

Regarding claim 20, Hagiwara discloses a computer readable medium encoded with processing instructions implementing a method of controlling a recording speed in a disc drive, the method comprising: generating a clock signal that is synchronized with a transmission speed of a received signal (as generated by the ATIP decoder – Figure 1, element 13); converting the received signal into recording data that is to be recorded on the disc by synchronizing with the clock signal (as shown in Figure 6); and recording the converted recording data on the disc (see the arrows indicating data transfer through elements 13, 14, 16, and 5 in Figure 1).

Regarding claim 21, Hagiwara discloses all of the limitations of claim 20 as discussed in the claim 20 rejection above and further that the generating the clock signal comprises: detecting an identifying signal capable of recognizing the transmission speed of the received signal (as performed by Figure 1, element 13); and generating a clock signal that is synchronized with the identifying signal (see Figure 6).

Regarding claim 22, Hagiwara discloses all of the limitations of claim 20 as discussed in the claim 20 rejection above and further that said method further comprises: controlling a rotation speed of the spindle motor that rotates the disc by synchronizing with the clock signal (see page 8, paragraph 0171 – since the disc velocity is in sync with the data being written and the data is in sync with the clock, the rotation of the disc must inherently be in sync with the clock).

Regarding claim 23, Hagiwara discloses a method of controlling a speed of a disc drive, comprising: transmitting an identifying signal of a transmission speed of an other transmitted signal (as performed by the ATIP decoder – Figure 1, element 13); receiving the identifying signal and the other transmitted signal (as performed by the ATIP decoder – Figure 1, element 13); and generating a clock signal synchronized with the transmission speed of the other transmitted signal (as performed by the ATIP decoder – Figure 1, element 13 – see also page8, paragraph 0173).

Regarding claim 24, Hagiwara discloses all of the limitations of claim 23 as discussed in the claim 23 rejection above and further that the method further comprises: converting the other transmitted signal into data synchronized with the clock signal (see page8, paragraph 0173).

Regarding claim 25, Hagiwara discloses an apparatus for controlling a speed of a disc drive, comprising: a transmitter to transmit an identifying signal and an other transmitted signal, wherein the identifying signal identifies a transmission speed of the other transmitted signal (as performed by Figure 1, element 6); a receiver to receive the identifying signal and the other transmitted signal (as performed by the ATIP decoder – Figure 1, element 13); and a generator to generate a clock signal synchronized with the transmission speed of the other transmitted signal (as performed by the ATIP decoder – Figure 1, element 13).

Regarding claim 26, Hagiwara discloses all of the limitations of claim 25 as discussed in the claim 25 rejection above and further that the apparatus further includes

a converter to convert the other transmitted signal into data synchronized with the clock signal (see Figure 4, elements 15 and 32).

Regarding claim 27, Hagiwara discloses a computer readable medium encoded with processing instructions for implementing a method of controlling a recording speed in a disc drive, the method comprising: transmitting an identifying signal of a transmission speed of an other transmitted signal (as performed by Figure 1, element 6); receiving the identifying signal and the other transmitted signal (as performed by the ATIP decoder – Figure 1, element 13); and generating a clock signal synchronized with the transmission speed of the other transmitted signal (as performed by the ATIP decoder – Figure 1, element 13; see also, page 8, paragraph 0173).

Regarding claim 28, Hagiwara discloses all of the limitations of claim 25 as discussed in the claim 25 rejection above and further that aid method further comprises: converting the other transmitted signal into data synchronized with the clock signal (as performed by Figure 1, element 14).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al. (hereinafter Hagiwara - US Doc. No. 2006/0023589 A1) in view of Mochizuki et al. (hereinafter Mochizuki – US Pat. No. 6,538,965 B2).

Art Unit: 2627

Regarding claim 5, Hagiwara discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above. Hagiwara fails to mention that the clock generator comprises a phase locked loop circuit.

Mochizuki discloses that the PLL circuit can be used to generate a clock signal (see column 13, lines 7-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the disc drive as disclosed by Hagiwara with the PLL clock generator as disclosed by Mochizuki, the motivation being to generate a clock signal by alternative means in order to allow for more accurate recording.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Tsai et al. (US Doc. No. 2005/0207297 A1) discloses a method of calibrating linear velocity of an optical disc based on a recorded signal for use in recording.

b. Huber et al. (US Pat. No. 6,654,324 B1) discloses a method for recording optical discs based on a clock source.

c. Park (US Doc. No. 2003/0012101 A1) discloses a method of controlling a disc reproduction device based on a recorded signal and a clock generator.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam R. Giesy whose telephone number is (571) 272-7555. The examiner can normally be reached on 8:00am- 5:30pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571) 272-7589. The fax phone

Art Unit: 2627

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ARG 6/20/2006



THANG V. TRAN
PRIMARY EXAMINER